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Design and Drafting Engineering Document Management Plan

Changes made in this revision:

- New procedure

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Design and Drafting Engineering Document Management Plan

1 Introduction

This document sets forth group-specific guidelines for management of engineering documents and drawings consistent with the Managing APS Documents Policy (APS_1273342). The Design Drafting Group is required to have such a policy in place to guide their staff in the details of controlling their engineering documents under this procedure. This procedure describes the allowable document storage locations and processes for engineering documents that must be accessed for use by the originator or others to maintain or modify components and systems that are part of the APS facility. Typical systems are Beamline RSS components, accelerator components, and significant Beamline equipment. The object is to store within a controlled engineering depository all documentation necessary for the continued efficient operation of the facility.

APS-U documents will be stored in accordance with policies and procedures established by APS-U management.

1.1 Related Documents

- Managing APS Documents Policy (APS_1273342)

- Managing APS Engineering Documents (APS_1423689)

- APS Design and Drafting Drawing Standard (APS_1429632)

- Argonne Quality Assurance Program Plan

2   Repository Use and Revision Tracking for Engineering Documents

Table 1, which is copied from the Managing APS Documents policy (APS_1273342), maps the valid document repositories with the workflows that are supported by each repository.

Table 1: Work Flows and Revision Tracking Capability per Repository Type

Repository	Staff-controlled / No Revision Tracking (Not a controlled document)	Staff-controlled / Revision Tracking (Not a controlled document)	Controlled Document (A formal change procedure including an approval workflow and Revision Tracking)
Group-Shared File System (GSFS)	X		
Group-Shared File System Plus a Revision Control System (RCS)		X	
ICMS		X	X (with approval thread)
Vault			X
PDMLink			X

AES/DD uses a graded-approach matrix to determine the rigor to be applied to DD-generated documents. The rigor of required document control increases from white to red, as shown in Table 2. Cost limits are to be applied to the entire sub-assembly; not to individual parts.

Table 2: Graded Approach for Document Control

Cost	Impact	Effort	Safety	Innovation
Low <$5000	Low	< 1 week	Low	Low
<$5000-$50,000	Medium	Week-month	Medium	Medium
<$50,000-$100,000	High	1-3 months	High	High
>$100,000		3-6 months		
		>6 months		

The left column of Table 3 lists the types of documents generated by the Design and Drafting Group in its routine operation. The rest of the table gives guidance on which workflow and repository should be used for each type of document.

Table 3: Work File Repository Usage

Criteria	Staff-controlled/ No Revision Tracking	Staff-controlled / Revision Tracking		Controlled Document			Drawing must meet D&D Standard (APS_1429632)
	Group-shared File System (GSFS)	GSFS + RCS	ICMS	ICMS (with approval thread)	Vault	PDMLink	
SAFETY: RSS Critical Component or Personnel Safety Related				X	X	X	X
MISSION CRITICAL: Machine Protection or Critical for Operation				X	X	X	X
DD Project Document Grading Matrix:							
White					X	X	
Green				X	X	X	X
Blue				X	X	X	X
Red				X	X	X	X
EXTERNAL USE: Subject to External Review Planned Use at Other Facilities				X	X	X	X
Legacy drawings: (Dxchange)	X						
Document/File Types							
AutoCAD					X		X
Pro/E						X	X
DD Standards			X				
DD Project Change Requests			X				
DEFAULT				X	X	X	X

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3 Group-shared File Systems and Revision Control Systems (RCS)

Group-shared Files Systems for DD

Path: \\Nickel\DCC-ddr_Scan$
Type of RCS: None
Purpose: Reference only (Controlled by DCC).

Path: \\Oxygen\cadfiles
Type of RCS: none
Purpose: Transfer files only.

4 Document/Drawing Requirements

To provide consistency within this group and with other groups, the following requirements for drawings should be used.

Criteria	Drawing Requirements
All drawings released DD staff	WBS-LDN or EDN # or valid Alias must be on drawing Title Block As specified by WBS and DCC. Use Design & Drafting Standard (APS_1429632) for all drawings associated with these projects.
Safety-Related Systems Work For Others	Use Design & Drafting Standard (APS_1429632) for all drawings associated with these projects

5 Software Tools

Standardized software applications for certain engineering drawing requirements are listed in the table below.

Document/Drawing Type	Software Tools
3D Modeling	PTC Windchill, Pro/Engineer
2D Layouts	Vault, AutoCAD

6 Alias Project Naming Convention (if any)

None

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7 Alias Drawing Naming/Numbering Convention (if any)

DCC WBS-LDN or EDP#

8 Group-specific EDP Collection Browse Categories

The Engineering Document Portal allows staff to define "collections" of documents that correlate to a project, component, or subsystem. These collections may be assigned group-specific tags to allow intuitive searching and browsing of the collections. Up to three group-specific menus may be defined, where cascaded menus may be dependent on the item chosen from the previous menu (i.e., each item in GroupMenu1 can specify a different GroupMenu2).

The default menu structure will consist of the Year, Month, and Workflow number associated with the release package for each drawing.

2013
- April
  - 07932 – XBPM Mask Revision
    - U1521102-110000
    - U1521102-111000
    - etc.
- May
  - 07834 – TXM Parts for Release
    - 433201-100305
    - 433201-100309
    - etc.

9 Feedback and Improvement

If you are using this procedure and have comments or suggested improvements for it, please go to the APS Policies and Procedures Comment Form[*] to submit your input to a Procedure Administrator. If you are reviewing this procedure in workflow, your input must be entered in the comment box when you approve or reject the procedure.

Instructions for execution-time modifications to a policy/procedure can be found in the following document: Field Modification of APS Policy/Procedure (APS_1408152).

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[*] http://centraldocs.aps.anl.gov/comment_form.php